REMARKS

Claims 1-78 were pending in the application. By the foregoing amendment, Claims 1, 35, 69, and 72 have been amended, and Claims 75-78 have been canceled. It is believed that amended Claims 1-74 are in condition for allowance in view of the foregoing amendments and following comments.

Restriction Requirement

Applicants hereby confirm, without traverse, their election of Group I claims for prosecution in the present application. It is noted, however, that the Examiner has made an inadvertent typographical error in indicating that the claims of Group I are drawn to compounds of formula (I) where n=0, instead of where n=1, as is believed to have been intended. The Examiner's intention to include claims drawn to compounds of formula (I) where n=1 is clearly evidenced by the Examiner's characterization of compounds in this group as "compounds of group I are substituted pyrido [4,3-d] pyrimidines"(see Examiner's action, page 3, line 1) and by the Examiner's inclusion of applicants' Claims 35-68 in this group. Accordingly, applicants have treated the Examiner's restriction requirement as written, except for the substitution of "n=1" for "n=0".

Specification

As suggested by the Examiner, the specification has been amended to insert a new paragraph after the title setting forth applicants' claim to the benefit of U.S. Provisional Application No. 60/172,403, filed December 17, 2000.

As requested by the Examiner at page 5 of the Office Action, the first paragraph on page 47 has been deleted.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

Claim Objections

The Examiner's objection to Claim 77 under 37 C.F.R. § 1.75 is moot in view of the cancellation of this claim.

Rejections Under 35 U.S.C. § 112

The Examiner has rejected Claims 1-74 based on the use of the phrase "a compound having the structure" in Claims 1 and 35. This rejection is now moot in view of the foregoing amendments to Claims 1 and 35.

The Examiner has rejected Claims 69, 70, and 72-74 based on the phrase "a composition", and has suggested that applicants amend this phrase in Claim 69 to read "a pharmaceutical composition" to overcome this rejection. In view of the foregoing amendment to Claim 69, this rejection is now moot.

The Examiner has rejected Claims 12, 13, 46, and 47 based on the use of the terms "loweraralkylcarbonyl" and "lowerheteroarylcarbonyl," indicating that the meaning of these terms is not clear. As would be apparent to a person of ordinary skill in the art, the term "loweraralkylcarbonyl" is intended to be equivalent to "araloweralkylcarbonyl," where loweralkyl is defined in the specification at page 17. Similarly, the term "lowerheteroaralkylcarbonyl" is intended to be equivalent to "heteroaryloweralkylcarbonyl", as that term is used by those skilled in the art.

The Examiner has rejected Claim 78 as being indefinite under 35 U.S.C. § 112, second paragraph, and as being in improper format under 35 U.S.C. § 101. These rejections are now moot in view of the cancellation of Claim 78.

Rejection of Claims Under 35 U.S.C. § 112, First Paragraph

The Examiner has rejected Claims 1-74 under 35 U.S.C. § 112, first paragraph, based on the definitions of the X and Y substituents in Claims 1 and 35. In view of the foregoing

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

amendments to Claims 1 and 35 that eliminate the X and Y substituents, this rejection is now moot.

The Examiner has rejected Claims 72-74 under 35 U.S.C. § 112, first paragraph, as being enabled only for the use of the compounds of the invention as inhibitors of GSK3 and as being useful in treating disorders that involve excessive expression of GSK3. In view of the foregoing amendment to Claim 72, this rejection is now moot.

CONCLUSION

Applicants' amendments set forth above have fully addressed all of the bases for rejection of claims set forth by the Examiner. Accordingly, applicants' Claims 1-74, as amended, are believed to be in condition for allowance. Reconsideration and favorable action is requested. The Examiner is further requested to contact applicants' representative at the number set forth below to resolve any issues that remain in the prosecution of this application.

Respectfully submitted,

CHRISTENSEN O'CONNOR
JOHNSON KINDNESS[PLLC]

Dennis K. Shelton
Registration No. 26,997
Direct Dial No. 206.695.1718

I hereby certify that this correspondence is being deposited with the U.S. Postal Service in a sealed envelope as first class mail with postage thereon fully prepaid and addressed to the Commissioner for Patents, U.S. Patent and Trademark Office, P.O. Box 2327, Arlington, VA 22202, on the below date.

Date: 1/22/02 Carole Julyan

DKS:cj

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS[PLLC]
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

VERSION WITH MARKINGS TO SHOW CHANGES MADE JANUARY 22, 2002

In the Specification

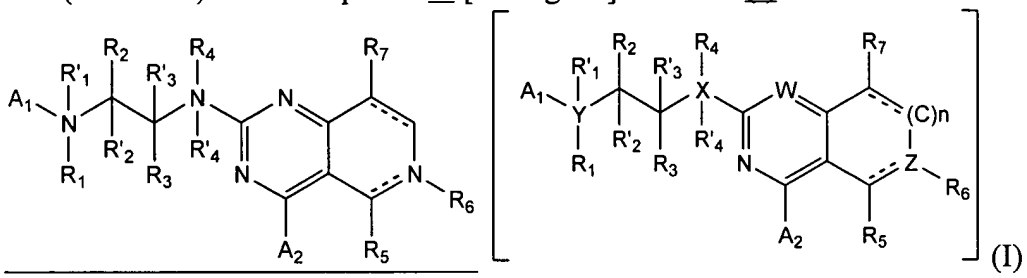
A new section entitled CROSS-REFERENCE TO RELATED APPLICATION has been added after the title at page 1.

The first paragraph on page 47 has been deleted.

In the Claims:

Please rewrite Claims 1, 35, 69, and 72 to read as follows:

1. (Amended) A compound of [having the] structure (I):



(I)

wherein:

[W and Z are optionally substituted carbon, nitrogen or sulfur;

X and Y are independently selected from the group consisting of nitrogen, oxygen, and optionally substituted carbon;

n is 0, 1 or 2;]

A_1 and A_2 are optionally substituted aryl, aryloxy, arylamino or heteroaryl;

R_1, R_2, R_3 and R_4 are independently selected from the group consisting of hydrogen, hydroxyl, and optionally substituted loweralkyl, cycloloweralkyl, alkylaminoalkyl, loweralkoxy, amino, alkylamino, alkylcarbonyl, arylcarbonyl, aralkylcarbonyl, heteroarylcarbonyl, heteroaralkylcarbonyl, aryl and heteroaryl;

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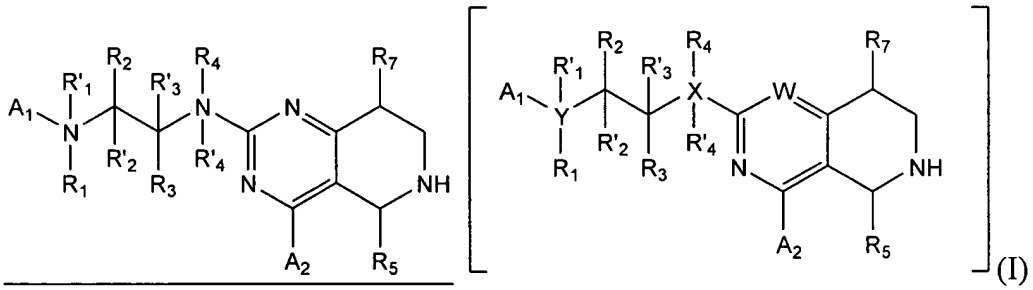
CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

R'_1, R'_2, R'_3 and R'_4 are independently selected from the group consisting of hydrogen, and optionally substituted loweralkyl;

R_5, R_6 and R_7 and are independently selected from the group consisting of hydrogen, hydroxy, halo, carboxyl, nitro, amino, amido, amidino, imido, cyano, and substituted or unsubstituted loweralkyl, loweralkoxy, alkylcarbonyl, arylcarbonyl, aralkylcarbonyl, heteroarylcarbonyl, heteraralkylcarbonyl, alkylcarbonyloxy, arylcarbonyloxy, aralkylcarbonyloxy, alkylaminocarbonyloxy, arylaminocarbonyloxy, formyl, loweralkylcarbonyl, loweralkoxycarbonyl, aminocarbonyl, aminoaryl, alkylsulfonyl, sulfonamido, aminoalkoxy, alkylamino, arylamino, aralkylamino, heteroarylamino, heteroaralkylamino, alkylcarbonylamino, alkylaminocarbonylamino, arylaminocarbonylamino, aralkylcarbonylamino, heteroaralkylcarbonylamino, arylcarbonylamino, heteroarylcarbonylamino, amidino, cycloalkyl, cycloamido, cyclothioamido, cycloamidino, heterocycloamidino, cycloimido, heterocycloimido, guanidinyl, aryl, biaryl, heteroaryl, heterobiaryl, heterocyclo, heterocycloalkyl, arylsulfonyl and arylsulfonamido;

and the pharmaceutically salts thereof.

35. (Amended) A compound of [having the] structure (I):



(I)

wherein:

[W is optionally substituted carbon, nitrogen or sulfur;

X and Y are independently selected from the group consisting of nitrogen, oxygen, and optionally substituted carbon;]

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CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

A_1 and A_2 are optionally substituted aryl, aryloxy, acylamino or heteroaryl;

R_1, R_2, R_3 and R_4 are independently selected from the group consisting of hydrogen, hydroxyl, and optionally substituted loweralkyl, cycloloweralkyl, alkylaminoalkyl, loweralkoxy, amino, alkylamino, alkylcarbonyl, arylcarbonyl, aralkylcarbonyl, heteroarylcarbonyl, heteroaralkylcarbonyl, aryl and heteroaryl;

R'_1, R'_2, R'_3 and R'_4 are independently selected from the group consisting of hydrogen, and optionally substituted loweralkyl;

R_5[, R_6] and R_7 and are independently selected from the group consisting of hydrogen, hydroxy, halo, carboxyl, nitro, amino, amido, amidino, imido, cyano, and substituted or unsubstituted loweralkyl, loweralkoxy, alkylcarbonyl, arylcarbonyl, aralkylcarbonyl, heteroarylcarbonyl, heteraralkylcarbonyl, alkylcarbonyloxy, arylcarbonyloxy, aralkylcarbonyloxy, alkylaminocarbonyloxy, arylaminocarbonyloxy, formyl, loweralkylcarbonyl, loweralkoxycarbonyl, aminocarbonyl, aminoaryl, alkylsulfonyl, sulfonamido, aminoalkoxy, alkylamino, arylamino, aralkylamino, heteroarylamino, heteroaralkylamino, alkylcarbonylamino, alkylaminocarbonylamino, arylaminocarbonylamino, aralkylcarbonylamino, heteroaralkylcarbonylamino, arylcarbonylamino, heteroarylcarbonylamino, amidino, cycloalkyl, cycloamido, cyclothioamido, cycloamidino, heterocycloamidino, cycloimido, heterocycloimido, guanidinyl, aryl, biaryl, heteroaryl, heterobiaryl, heterocyclo, heterocycloalkyl, arylsulfonyl and arylsulfonamido;

and the pharmaceutically acceptable salts thereof.

69. (Amended) A pharmaceutical composition comprising an amount of a compound of claim 1 effective to inhibit [modulate] GSK3 activity in a human or animal subject when administered thereto, together with a pharmaceutically acceptable carrier.

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CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

72. (Amended) A method for treating a [GSK3-mediated] disorder associated with excessive GSK3 activity in a human or animal subject, comprising administering to the human or animal subject an amount of a composition of claim 69 effective to inhibit GSK3 activity in the subject.

Claims 75-78 have been canceled.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100